

# Memorandum

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Research Expansion Project Off.  
Children's Hospital  
300 Longwood Ave.  
Boston, MA 02115

Date: July 31, 1987

Ref: 1599

From: Vanasse Hangen Brustlin, Inc.  
60 Birmingham Parkway  
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Re: Longwood Avenue On-Street  
Parking Spaces  
Removal Feasibility Study

## A. INTRODUCTION

In response to a request by the Boston Transportation Department (BTD) and the Boston Redevelopment Authority (BRA), Vanasse Hangen Brustlin, Inc. conducted a study of the on-street parking conditions along Longwood Avenue from The Riverway to Huntington Avenue in the Longwood Medical Area (LMA) for Children's Hospital. The purpose of this study was to investigate the existing utilization levels along the street, evaluate the feasibility of removing the on-street parking spaces within the study area, and analyze the parking system impact of removing the parking spaces from the available supply.

## B. DATA COLLECTION

Determining the current parking system utilization in the study area requires a thorough understanding of how the existing parking supply in the area is being used. To identify these usage characteristics, a series of inventories/surveys were conducted on June 26, 1987 and July 7, 1987 including:

- On-Street Parking Supply Inventory - to determine the number and location of the area's parking resources;







- Parking Use Survey - to determine how the existing spaces are now used (i.e., daily space usage, turnover, accumulation).
- On-Street Parking Supply Inventory

An inventory of on-street public parking spaces on Longwood Avenue between The Riverway and Huntington Avenue was conducted as part of this evaluation. Complete information on the supply and regulations is shown in Figure 1 and summarized in Table 1. Inventories identified a total of approximately 59 legal parking spaces available on this section of Longwood Avenue, which includes 49 two-hour limit metered spaces and 10 unrestricted spaces. All legal spaces are along the south side curblane of Longwood Avenue between Autumn Street and Brookline Avenue or between Blackfan Street and Huntington Avenue. The spaces are posted for No Parking between 4:00 PM-6:00 PM in an effort to improve afternoon peak period traffic. Similarly, the spaces between Autumn Street and Brookline Avenue are not available between 8:00-9:30 AM as open lane for morning peak period traffic. The regulations and restrictions appear to be adequately signed, in general, except in the vicinity of the 10 unrestricted spaces.

TABLE 1  
STUDY AREA LEGAL ON-STREET PARKING SUPPLY SUMMARY

| Category              | Type                                   | Location        | Spaces |
|-----------------------|----------------------------------------|-----------------|--------|
| Public<br>General Use | Unrestricted<br>On-Street              | Longwood Avenue | 10     |
| Public<br>General Use | Two-Hour<br>Limit Metered<br>On-Street | Longwood Avenue | 49     |
| TOTAL SPACES          |                                        |                 | 59     |

Parking regulations are enforced by parking regulation enforcement personnel from the City of Boston, Department of Transportation.



- Observed Usage

A parking space turnover survey for on-street parking was conducted on Friday, June 26 and Tuesday, July 7, 1987 between 7:00 AM and 6:00 PM to develop a profile of how the legal and illegal parking spaces are used throughout the day. Included was a measurement of the number of vehicles parked in each space, the average parking duration of each vehicle and the number of hours each vehicle is parked.

By summarizing the results of the turnover survey, an accumulation profile was developed and the overall observed peak parking demand on the street was measured.

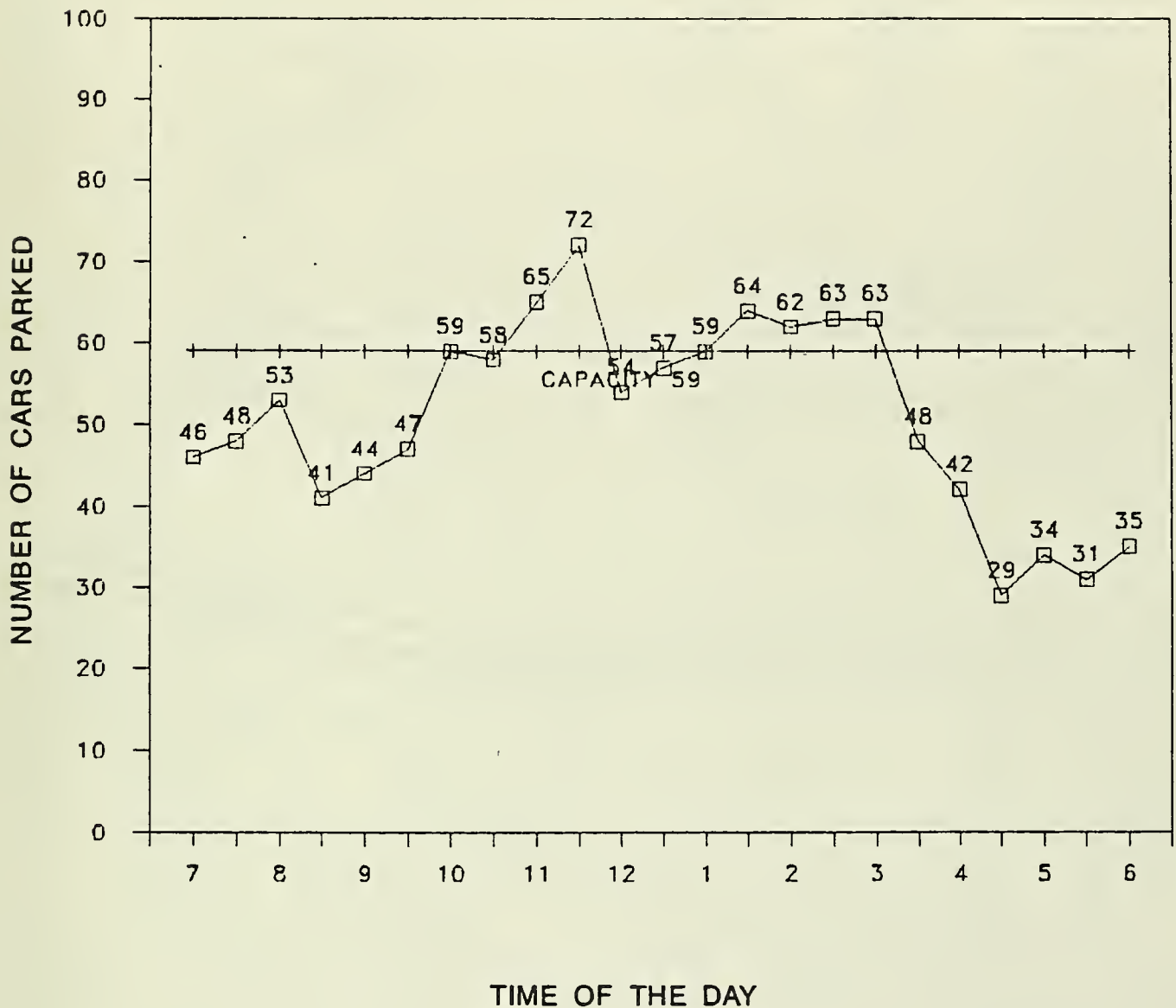
- Accumulation

A standard practice used in analyzing parking conditions is to compare the usage of a facility with its practical capacity. Practical capacity is defined as the practical limit of available parking spaces at any one given time. It attempts to take into account average vehicle durations, vehicle turnover, and searching for a space. The practical capacity of curbside parking is generally achieved at an occupancy rate of 85 percent of physical capacity.

As shown in Figure 2, the peak accumulation of vehicles in the study area occurred at 11:30 AM, when 72 parked vehicles were observed, including 41 vehicles in metered spaces, 10 vehicles in unrestricted spaces, and 21 vehicles in illegal parking areas. Figure 2 illustrates the variation in parking demand compared to physical capacity. As can be seen, the total parking demand is higher than the available supply during daytime hours primarily from 10:00 AM to 3:00 PM. The overall utilization was 120 percent at the 11:30 AM peak accumulation time. Figure 3 gives the peak occupancy along each individual block at the 11:30 AM peak period. As the figure indicates, the parking patterns are different along the street although the area-wide daily demand was consistently over the capacity. The on-street legal



## LONGWOOD AVE. PARKING STUDY



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Parking  
Accumulation

Fig. 2



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parking spaces were fully occupied and the posted no parking areas were also found to be highly utilized between Blackfan Street and Huntington Avenue. However, the metered parking spaces between Autumn Street and Brookline Avenue were not fully utilized. There were only metered spaces occupied among a total of 23 spaces supply and one illegal parking between these two blocks at the peak time.

#### ● Turnover Study

An overall accumulation survey provides an indication of the parking system supply/demand relationship, however, without more refined analysis, specific areas of high utilization or inefficiency would not be identified. The results from the turnover survey for the on-street parking spaces enable the identification of how long vehicles are parked in specific locations, and compliance with existing time limit regulations.

There were a total of 379 parked cars observed during the survey period, with which the total space hours and average durations were calculated. Figure 4 illustrates the observed average parking duration for each block. Overall, the average duration for all vehicles parked on-street in the study area was observed to be approximately 90 minutes. The average duration for the metered curb parking spaces was measured at 90 minutes, which is less than the regulated two hour limit parking. The average duration in the unrestricted curb parking spaces was 145 minutes. For the illegal parking along Longwood Avenue within the study area, the average duration was 80 minutes.

#### ● Overtime Parking

There are 26 parking spaces along the Longwood Avenue south side curblane between Blackfan Street and Huntington Avenue and 23 parking spaces between Autumn Street and Brookline Avenue that are regulated by two-hour limit meters. It was observed that 40 out of the 260 vehicles on this side were parked over the two-hour time limit during the field survey, representing a 15 percent violation rate along these metered curb faces.







- Long-Term (All-Day) Parking

Vehicles parked in the same location for more than four hours are generally considered to be long-term parkers. These are likely to be employees of area institutions or visitors who park on the street rather than in a lot or garage. Table 2 summarizes the observed durations of parked vehicles observed along curbsides during the survey.

Within the entire study area, a total of 24 long-term parkers were observed, which is 6.5 percent of the total parkers observed during surveys. However, as can be seen from Table 2 and Figure 5, the most critical locations of curbside space (i.e. two-hour parking) from Blackfan Street to Huntington Avenue experienced 10 long-term parkers with a total of 68 space-hours. While this number may seem low, the overall effect of the long-term parking is these spaces may prevent up to 34 short-term parkers from using these same spaces over the course of the day.

- Violations of Posted On-Street Parking Regulations

Due to heavy peak hour traffic on Longwood Avenue it is posted for "No Parking" between 7:00 AM and 9:30 AM from Riverway to Brookline Avenue and between 4:00 PM and 6:00 PM from Riverway to Huntington Avenue along Longwood Avenue. However, it was observed that there were nine different parked cars between 7:00 AM and 9:30 PM from Riverway to Brookline Avenue, and there were 68 different parked cars between 4:00 PM and 6:00 PM from Riverway to Huntington Avenue.

In addition, there were also a considerable number of automobiles parked in the no parking areas throughout the survey periods. During the survey period, a total of 96 different vehicles were observed violating the posted no parking regulations along Longwood Avenue. These vehicles parked in designated no parking areas or during the morning or afternoon peak period no parking restrictions. This represents 25 percent of the total number of on-street parkers observed through the survey.







Some food vendors were also observed sometimes parking along curbside which is in the posted no parking zones, to sell their products.

TABLE 2  
OBSERVED PARKING DURATION  
ON LONGWOOD AVENUE

| Street Segment                                                                           | Total Parkers<br>Observed<br>(7 AM to 6 PM) | <1<br>Hour         | 1-2<br>Hours       | 2-4<br>Hours      | >4<br>Hours       |
|------------------------------------------------------------------------------------------|---------------------------------------------|--------------------|--------------------|-------------------|-------------------|
| Autumn-Pilgrim<br>South side Meter                                                       | 55                                          | 35                 | 14                 | 5                 | 1                 |
| Pilgrim-Brookline<br>No Parking                                                          | 59<br>5                                     | 33<br>4            | 18<br>1            | 7<br>0            | 1<br>0            |
| Brookline-Binney<br>South side N.P.*<br>North side N.P.                                  | 32<br>0                                     | 22<br>0            | 7<br>0             | 2<br>0            | 1<br>0            |
| Binney-Blackfan<br>South side N.P.<br>North side N.P.                                    | 7<br>11                                     | 1<br>7             | 2<br>4             | 1<br>0            | 3<br>0            |
| Blackfan-Huntington<br>South side Meter<br>Unrestricted<br>No Parking<br>North side N.P. | 146<br>23<br>13<br>28                       | 50<br>9<br>8<br>10 | 70<br>5<br>5<br>14 | 16<br>3<br>0<br>2 | 10<br>6<br>0<br>2 |
| Total                                                                                    | 379                                         | 179                | 140                | 36                | 24                |

\* No Parking

Also during survey period, City of Boston meter maids were observed occasionally patrolling and enforcing the parking regulations within the site. Some parkers were issued citations for violating the parking regulations posted along the curbside.



### C. SUMMARY OF EXISTING CONDITIONS

The analysis of the existing on-street parking spaces within the study area indicates several key characteristics, which are concisely summarized below:

- From 10:00 AM to 3:00 PM, the parking supply of on-street spaces is essentially fully utilized with 120 percent of the capacity occupied at the peak, which occurs around 11:30 AM.
- There were a total of 379 parking space users observed within the study area during the survey period, 96 (25%) of which were observed violating the posted no parking regulations along Longwood Avenue, such as no parking areas and no parking during rush hours.
- Fifteen percent of the total two-hour limit meter space users parked over the posted time limit.

### D. ANTICIPATED IMPACT OF REMOVING EXISTING PARKING SYSTEM

As illustrated earlier, there were a total of 379 automobiles parked within the study area during the survey period from 7:00 AM to 6:00 PM in which 283 were legal parkers and 96 were illegal parkers. If Longwood Avenue is posted for no parking any time within the study area, the 379 daily parkers need to be relocated to the on-street parking facility of neighboring streets or off-street parking facilities.

*Where  
10 May  
go?*

The relocation of 379 daily parking space users may not be significant compared with the area wide parking supply of both on-street and off-street parking facilities. However, there will be an inconvenience for the short-term parkers seeking immediate parking spaces close to the adjacent institutions. Short-term parkers will have to find the parking space either in neighboring streets or in nearby off-street parking facilities, resulting in a longer walk required to reach their destination.



If the metered parking spaces are removed, then the City will lose an estimated maximum \$357 in revenue daily, assuming that the meter space is fully utilized and all fees are paid during the legal parking period from 8:00 AM to 4:00 PM between Blackfan Street and Huntington Avenue and 9:30 AM to 4:00 PM between Autumn Street and Brookline Avenue. The calculation is based on the fee for the metered parking spaces of 25 cents for each 15 minutes. Assuming the parking regulation is enforced 303 days in a year, the total revenue lost to the City will be projected at the maximum of approximately \$108,300 annually.

#### E. CONCLUSIONS

The proposed removal of the on-street parking facility along Longwood Avenue between Brookline Avenue and Huntington Avenue has been analyzed with respect to the existing on-street parking system operations. The observations of the on-street parking system reveals:

- The on-street parking facility within the study area is heavily utilized throughout the day. The space occupancy is over 100 percent of the physical capacity during most of the 10:00 AM-3:00 PM period.
- Twenty-five (25) percent of total on-street parking users were illegal parkers who parked their vehicle in a posted no parking area or during a peak period no parking restriction.
- There were 40 parkers who parked in a two-hour limit meter space for more than two hours; 12 of these were long-term parkers who parked in these spaces for more than four hours.
- There were a total of 379 automobiles parked within the study area during the survey period, of which 283 were parked legally.
- The 379 on-street parkers over the course of a day exhibit an average 90 minute parking duration.



- City would lose up to an estimated \$108,300 in revenue annually, if meters are removed.
- There will be an increased inconvenience to the short-term parking space users who seek immediate access to the hospital facilities within the study area.

The removal of the on-street parking facility along Longwood Avenue between Brookline Avenue and Huntington Avenue will significantly increase the roadway capacity, enhance traffic flow during peak hours, and reduce congestion. Removal of on-street parking will also increase pedestrian visibility to Longwood Avenue traffic. In particular, traffic flow improvements can be achieved in several key locations by removing the on-street parking spaces along Longwood Avenue. Key benefits include:

- Two full travel lanes would be open between Binney Street and Huntington Avenue by removing all curb parking. With wider lanes and no curb parking, interference with left turns would also be reduced.
- The City's experience of eliminating parking on three downtown streets (Tremont, Congress, and Arlington) resulted in improved travel times and reductions in negative air quality impacts.<sup>1</sup>
- The widened travel lanes will provide safer maneuverability for truck and bus operations.
- Pedestrian crossing patterns will be improved as well since legal and illegal pedestrian crossings will be more visible.

Enforcement of the posted regulations will be critical to insure a successful parking prohibition.

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<sup>1</sup>/ TAMS Inc., Citywide Strategic Parking Plan, February 1987

